

CERTAIN SPECIFIC NUTRITIONAL FACTORS IN COMMON FOODS 146
(Per 100 Grams portion)

Food	Salt Na Cl. gms.	Calcium gms.	Iron gms.	Thiamine mg.	Niacin mg.	Ascorbic Acid mg.
Snack	.301	.016	.0016	.06	3.16	
Ban	.302	.028	.0020	.07	2.10	
Mushey	.112	.010	.0020	.092	4.98	
Panet	.116	.014	.0020	.09	4.36	
Red	.120	.017	.0022	.092	5.23	
Cococots	.192	.020	.0014	.02	.42	
Kanones	.131	.006	Trace	.04	.30	7.0
Avocado	.018	.016	.0010	.05	.80	13.0
Orange	.009	.004	Trace	.06	.16	32.0
Lemon	.005	.003	Trace	.01	.08	72.0
Cupulruits	?	.000	Trace	.03	.10	64.0
Cheese (american)	?	.164	.002	.04	.08	

The intakes of salt average between 1-2 gms. daily; iron between 7-14 mg.; calcium from 0.4-0.9 gms.; thiamin from 0.5-1.0 mg., and niacin from 10-30 mg. During January, February, March and April, the ascorbic acid consumption is low, approximately 10-15 mg. a day. From May to July there is a slight increase of about 5 mg. more in the dietary, while from August to December the intakes will be from 150-300 mg. daily due to the high consumption of citrus fruits, the high intake during this period affords sufficient protection of health during the subsequent period under a maintenance regime.

Clinical findings as regards nutrition. Anemia is the most prevalent finding among children of the Coco River Basin, and what is amazing is the way children tolerate rather drastic reductions in hemoglobin content. Admittedly, altitude is no problem in this region so that at least there is no demand for an increased oxygen capacity of the blood. On the other hand it is impossible to differentiate, clinically, between children having a blood hemoglobin content of 8.0 gms., and those with 13.0 gms. per 100 gms. of whole blood. Furthermore, if the anemia is improved by the use of iron salts the parents may or may not note a difference in the child's behaviour, clinically the difference cannot be detected except in rare instances. In the more severe anemias children complain of lassitude, fatigue, restlessness and lack of energy.

The primary cause of anemia is the type of diet used in early infancy. The child is placed at the breast as soon after birth as possible and is fed whenever it cries. Irregularity in feeding seems to be of no bother to the parents. However, during teething the mother automatically reduces the number of times a day a child is placed at breast since teeth

146 irritate the nipple and causes discomfort to the mother. It is at this point that considerable supplementary feeding is introduced. It is of interest to note that the teeth begin to make their appearance at about the fourth to fifth month in contrast to the average of six to seven months in the United States. The fact that iron reserves are exhausted at about the third month and that supplemental feeding occurs shortly thereafter is a curious coincidence favoring the child.

[27] The Indians believe that food consumed by the mother produces milk and for this reason the mothers eat often and large quantities of food. The children are fed bananas early in life and even if the iron intake from milk supplemented with bananas amounts to 4 mg. a day, it is insufficient to adequately overcome physiological hemoglobin depletion. Theoretically this would soon be made up by foods rich in iron. This in fact is what is attempted by the natives themselves but the anemia is not generally overcome because just as soon as the children begin crawling outdoors form infestation occurs and a relative anemia may be maintained.

146 For practical field use, hemoglobin determinations were carried out using the Sahli equipment and 100 per cent hemoglobin was computed to indicate 15.6 gm. per cent hemoglobin in blood. For purposes of comparison between hemoglobin levels in Guatemala, Yucatán²² and the Coco territory of Nicaragua, the averages represented:

Guatemalans (691 cases, Shattuck)	73.3 per cent
Yucatecos (2897 cases, Saunders)	71.9 per cent
(1261 cases, Shattuck)	70.6 per cent
Coco River (100 infants, Pijoan)	55.0 per cent

It is admitted that the method of hemoglobin estimation varied, i. e., Shattuck used the Teikquist method, whereas the Sahli method was used in the Coco study. Regardless of this fact, there was less altitude in the Coco Basin to provoke hemoglobin increases and secondly the incidence of insidious disease seemed greater.

Hemoglobin values in 100 infants (2-3 months old) in Zapaca and Wapasa, Coco Basin, Nicaragua.

Number of infants	Hemoglobin value
29	60-70 per cent
48	50-60 per cent
23	40-50 per cent

Another point of difference between this study and the others is that the findings by Shattuck was fairly representative of his territory

²² Shattuck, G. C. A Medical Survey of Guatemala. Carnegie Institution of Washington, 1928.